IN THE CLAIMS:

Please amend the claims as follows:

Claims 1-31 (cancelled)

32.   (Previously Presented)   A method of depositing a metal on a substrate having one or more features formed thereon, comprising:

depositing a seed layer over the substrate and the one of more features;

applying a first biasing voltage to the seed layer while immersing the substrate into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution;

applying a second biasing voltage to the seed layer following immersion, the second biasing voltage being higher than the first biasing voltage; and

applying a pulsed biasing voltage to the seed layer, the pulsed biasing voltage being lower than the second biasing voltage.

33.   (Previously Presented)   The method of claim 32, further comprising, prior to applying the pulsed biasing voltage, applying a third biasing voltage to the seed layer, the third biasing voltage being lower than the second biasing voltage.

34.   (Previously Presented)   The method of claim 32, further comprising, prior to applying the pulsed biasing voltage, applying a third biasing voltage to the seed layer for about 1.5 seconds longer than the application of the pulsed biasing voltage.

35.   (Previously Presented)   The method of claim 32, further comprising, prior to applying the pulsed biasing voltage, applying a third biasing voltage to the seed layer for about 1.5 seconds longer than the application of the pulsed biasing voltage, the third biasing voltage being lower than the second biasing voltage.

36.   (Previously Presented)   The method of claim 32, wherein the first biasing voltage ranges from about 1 volt to about 5 volts.

37. (Previously Presented)   The method of claim 32, wherein the second biasing voltage ranges from about 2 volts to about 10 volts.

38. (Previously Presented)   The method of claim 32, wherein the first biasing voltage ranges from about 1 volt to about 5 volts, and wherein the second biasing voltage ranges from about 2 volts to about 10 volts.

39. (Previously Presented)   The method of claim 32, wherein the second biasing voltage is about 5 volts.

40. (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are applied from about 0.25 seconds to about 2 seconds.

41. (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are applied for less than about 5 seconds.

42. (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are applied from about 0.25 seconds to about 2 seconds, wherein the first biasing voltage ranges from about 1 volt to about 5 volts, and wherein the second biasing voltage ranges from about 2 volts to about 10 volts.

43. (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are applied for about less than 5 seconds, wherein the first biasing voltage ranges from about 1 to about 5 volts, and wherein the second biasing voltage ranges from about 2 volts to about 10 volts.

44. (Previously Presented)   The method of claim 32, wherein the substrate has a 200 mm diameter, and wherein applying the second biasing voltage comprises applying a plating current of about 5.41 amps to the substrate.

PATENT

Atty. Dkt. No. AMAT/4471.Y1/CMP/ECP/RKK

45. (Previously Presented) The method of claim 33, wherein the substrate has a 200 mm diameter, and wherein applying the third biasing voltage comprises applying a plating current of about 3.14 amps to the substrate.

46. (Previously Presented) The method of claim 33, wherein the substrate has a 200 mm diameter, wherein applying the second biasing voltage comprises applying a plating current of about 5.41 amps to the substrate, and wherein applying the third biasing voltage comprises applying a plating current of about 3.14 amps to the substrate.

47. (Previously Presented) The method of claim 32, wherein the pulsed biasing voltage is pulsed for a plurality of cycles as determined by the depth of the one or more features.

48. (Previously Presented) The method of claim 32, wherein the first biasing voltage ranges from about 1 volt to about 5 volts, wherein the second biasing voltage ranges from about 2 volts to about 10 volts, and wherein the pulsed biasing voltage is pulsed for a plurality of cycles as determined by the depth of the one or more features.

49. (Previously Presented) The method of claim 32, wherein the pulsed biasing voltage is pulsed for about fifteen cycles.

50. (Previously Presented) The method of claim 32, wherein the pulsed biasing voltage is applied for about 4 seconds.

51. (Previously Presented) The method of claim 32, wherein the pulsed biasing voltage is applied from about 1 second to about 7 seconds.

52.   (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are applied from about 0.25 seconds to about 2 seconds, and wherein the pulsed biasing voltage is applied for about 4 seconds.

53.   (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are applied in less time than the pulsed biasing voltage.

54.   (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are applied from about 0.25 seconds to about 2 seconds, and the pulsed biasing voltage is applied from about 1 second to about 7 seconds; and wherein the first biasing voltage ranges from about 1 volt to about 5 volts, the second biasing voltage ranges from about 2 volts to about 10 volts, and the pulsed biasing voltage is pulsed for about fifteen cycles.

55.   (Previously Presented)   The method of claim 32, wherein the pulsed biasing voltage comprises a plating biasing voltage alternated by a de-plating biasing voltage.

56.   (Previously Presented)   The method of claim 32, wherein the pulsed biasing voltage comprises a plating biasing voltage alternated by a de-plating biasing voltage, the plating biasing voltage being configured for causing deposition of the metal on the seed layer and the de-plating biasing voltage being configured for etching away the deposition of the metal from each opening of the one or more features.

57.   (Previously Presented)   The method of claim 32, wherein applying the pulsed biasing voltage comprises applying a positive plating current alternated with a negative de-plating current.

58.   (Previously Presented)   The method of claim 32, wherein applying the pulsed biasing voltage comprises applying a positive plating current alternated with a negative

de-plating current, the positive plating current being configured for causing deposition of the metal inside the features.

59.   (Previously Presented)   The method of claim 32, wherein applying the pulsed biasing voltage comprises applying a positive plating current alternated with a negative de-plating current, the positive plating current being configured for causing deposition of the metal inside the features, the negative de-plating current being configured for keeping each opening of the features open while the metal is being deposited inside the features.

60.   (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are applied for about less than 5 seconds, wherein the first biasing voltage ranges from about 1 to about 5 volts, wherein the second biasing voltage ranges from about 2 volts to about 10 volts, and wherein applying the pulsed biasing voltage comprises applying a positive plating current alternated with a negative de-plating current, the positive plating current being configured for causing deposition of the metal inside the features, the negative de-plating current being configured for keeping each opening of the features open while the metal is being deposited inside the features.

61.   (Previously Presented)   The method of claim 32, wherein the electrolyte solution is acidic.

62.   (Previously Presented)   The method of claim 32, wherein the electrolyte solution has a low pH.

63.   (Previously Presented)   The method of claim 32, wherein the first biasing voltage is configured for causing deposition of the metal on the seed layer.

64.   (Previously Presented)   The method of claim 32, wherein the first biasing voltage is configured to limit etching of the seed layer by the electrolyte solution.

Page 10

PATENT

Atty. Dkt. No. AMAT/4471.Y1/CMP/ECP/RKK

65. . (Previously Presented)   The method of claim 32, wherein the second biasing voltage is configured for causing deposition of the metal to the seed layer.

66.   (Previously Presented)   The method of claim 32, wherein the first biasing voltage and the second biasing voltage are configured for causing deposition of the metal on the seed layer, and wherein the deposition caused by the second biasing voltage is greater than the deposition caused by the first biasing voltage.

67.   (Currently Amended)   A method of depositing a metal on a substrate having one or more features formed thereon, comprising:

depositing a seed layer over the substrate and the one of more features;

applying a first biasing voltage to the seed layer while immersing the substrate into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution, the first biasing voltage being configured to limit etching of the seed layer by the electrolyte solution;

applying a second biasing voltage to the seed layer following immersion, the second biasing voltage being configured for causing deposition of the metal to the seed layer, wherein the second biasing voltage is higher than the first biasing voltage; and

applying a pulsed biasing voltage to the seed layer, the pulsed biasing voltage being configured for applying a positive plating current alternated with a negative de-plating current, the positive plating current being configured for causing deposition of the metal inside the features, the negative de-plating current being configured for keeping each opening of the features open while the metal is being deposited inside the features by the positive plating current.

68.   (Previously Presented)   The method of claim 67, further comprising, prior to applying the pulsed biasing voltage, applying a third biasing voltage to the seed layer, the third biasing voltage being lower than the second biasing voltage.

PATENT

Atty. Dkt. No. AMAT/4471.Y1/CMP/ECP/RKK

69.   (Previously Presented)   The method of claim 67, wherein the first biasing voltage ranges from about 1 volt to about 5 volts.

70.   (Previously Presented)   The method of claim 67, wherein the second biasing voltage ranges from about 2 volts to about 10 volts.

71.   (Previously Presented)   The method of claim 67, wherein the second biasing voltage is about 5 volts.

72.   (Previously Presented)   The method of claim 67, wherein the first biasing voltage and the second biasing voltage are applied from about 0.25 seconds to about 2 seconds.

73.   (Previously Presented)   The method of claim 67, wherein the first biasing voltage and the second biasing voltage are applied for less than about 5 seconds.

74.   (Previously Presented)   The method of claim 67, wherein the pulsed biasing voltage is pulsed for a plurality of cycles as determined by the depth of the one or more features.

75.   (Previously Presented)   The method of claim 67, wherein the pulsed biasing voltage is pulsed for about fifteen cycles.

76.   (Previously Presented)   The method of claim 67, wherein the pulsed biasing voltage is applied for about 4 seconds.

77.   (Previously Presented)   The method of claim 67, wherein the pulsed biasing voltage is applied from about 1 second to about 7 seconds.

78.   (Currently Amended)   An apparatus for depositing a metal on a substrate having one or more features formed thereon, comprising:

a means for depositing a seed layer over the substrate and the one of more features;

a means for applying a first biasing voltage to the seed layer while the substrate is being immersed into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution;

a means for applying a second biasing voltage to the seed layer following immersion, the second biasing voltage being higher than the first biasing voltage, wherein the second biasing voltage is higher than the first biasing voltage; and

a means for applying a pulsed biasing voltage to the seed layer, the pulsed biasing voltage being lower than the second biasing voltage.

79.   (Previously Presented)   The apparatus of claim 78, wherein the means for applying the first biasing voltage comprises a means for causing deposition of the metal on the seed layer.

80.   (Previously Presented)   The apparatus of claim 78, wherein the means for applying the first biasing voltage comprises a means for limiting etching of the seed layer.

81.   (Previously Presented)   The apparatus of claim 78, wherein the means for applying the second biasing voltage comprises a means for causing deposition of the metal on the seed layer.

82.   (Previously Presented)   The apparatus of claim 78, further comprising a means for applying a third biasing voltage to the seed layer, the third biasing voltage being less than the second biasing voltage.

83.   (Previously Presented)   The apparatus of claim 78, wherein the means for applying the pulsed biasing voltage comprises a means for causing deposition of the metal on the seed layer and a means for etching away the deposition of the metal from each opening of the one or more features.

84.   (Previously Presented)   The apparatus of claim 78, wherein the means for applying the pulsed biasing voltage comprises a means for applying a positive plating current and a means for applying a negative de-plating current.

85.   (Currently Amended)   A method of depositing a metal on a substrate having one or more features formed thereon, comprising:

applying a first biasing voltage to the substrate while immersing the substrate into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution, wherein the first biasing voltage is configured to generate a current that increases over time as the substrate is introduced into the electrolyte solution; and

applying a plating voltage to the substrate once the substrate has been immersed into the electrolyte solution[, the plating voltage being higher than the initial portion of the first biasing voltage].

86.   (Previously Presented)   The method of claim 85, wherein the current is a ramping current.

87.   (Previously Presented)   The method of claim 85, wherein the first biasing voltage is about 0.8 volts.

88.   (Previously Presented)   The method of claim 85, wherein the first biasing voltage is configured to limit etching by the electrolyte solution of a seed layer disposed on the one or more features formed on the substrate as the substrate is being immersed into the electrolyte solution.

89.   (Previously Presented)   The method of claim 94, wherein the first biasing voltage and the second biasing voltage are applied for about 0.25 seconds to about 5 seconds.

PATENT

Atty. Dkt. No. AMAT/4471.Y1/CMP/ECP/RKK

90.   (Previously Presented)   The method of claim 85, wherein the first biasing voltage ranges from about 1 volt to about 5 volts.

91.   (Previously Presented)   The method of claim 85, wherein the electrolyte solution is acidic.

92.   (Previously Presented)   The method of claim 85, wherein applying the plating voltage step comprises applying a pulsed biasing voltage to the substrate.

93.   (Previously Presented)   A method of depositing a metal on a substrate having one or more features formed thereon, comprising:

applying a first biasing voltage to the substrate while immersing the substrate into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution, wherein the first biasing voltage is configured to generate a current that increases over time; and

applying a positive plating current alternated with a negative de-plating current, the positive plating current being configured to cause deposition of metal inside the features, the negative de-plating current being configured to keep each opening of the features open while the metal is being deposited inside the features by the positive plating current.

94.   (Previously Presented)   A method of depositing a metal on a substrate having one or more features formed thereon, comprising:

applying a first biasing voltage to the substrate while immersing the substrate into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution, wherein the first biasing voltage is configured to generate a current that increases over time;

applying a second biasing voltage to the substrate after applying the first biasing voltage, the second biasing voltage being configured to attract metal ions contained in the electrolyte solution near the features; and

applying a plating voltage to the substrate once the substrate has been immersed into the electrolyte solution.

95.   (Previously Presented)   A method of depositing a metal on a substrate having one or more features formed thereon, comprising:

applying a first biasing voltage to the substrate while immersing the substrate into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution, wherein the first biasing voltage is configured to generate a current that increases over time;

applying a plating voltage to the substrate once the substrate has been immersed into the electrolyte solution; and

applying a second biasing voltage to the substrate after applying the first biasing voltage but prior to applying the plating voltage, wherein the second biasing voltage is configured to attract metal ions contained in the electrolyte solution near the features and wherein the second biasing voltage is higher than the plating voltage.

96.   (Previously Presented)   A method of depositing a metal on a substrate having one or more features formed thereon, comprising:

applying a first biasing voltage to the substrate while immersing the substrate into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution, wherein the first biasing voltage is configured to generate a ramping current; and

applying a pulsed biasing voltage to the substrate once the substrate has been immersed into the electrolyte solution.

97.   (Previously Presented)   A method of depositing a metal on a substrate having one or more features formed thereon, comprising:

applying a first biasing voltage to the substrate while immersing the substrate into an electrolyte solution contained in an electrolyte container comprising an anode immersed in the electrolyte solution, wherein the first biasing voltage is configured to generate a ramping current; and

applying a positive plating current alternated with a negative de-plating current, the positive plating current being configured to cause deposition of metal inside the features, the negative de-plating current being configured to keep each opening of the features open while the metal is being deposited inside the features by the positive plating current.

98.   (Previously Presented)   The method of claim 85, wherein the first biasing voltage is negative relative to the anode.

99.   (Previously Presented)   The method of claim 85, wherein the current increases as the percentage of substrate immersed into the electrolyte solution increases.

100.   (Previously Presented)   The method of claim 85, wherein the first biasing voltage comprises a negative voltage that is calculated to limit etching of a seed layer formed on the substrate by the electrolyte solution.

101.   (Previously Presented)   The method of claim 85, wherein the first biasing voltage comprises a negative voltage configured to deposit metal onto the substrate at a first deposition rate, the first deposition rate being greater than an etching rate of the electrolyte solution.